SECTION A

CASE STUDY - COMPULSORY

GAMA LTD is the leading producer of infant cereals in Ghana, manufacturing both Wheat Cereals and Maize Cereals. The company has faced many challenges due to the recent weakening of the Cedi, against the US Dollar. Cereal price of a 50g has increased by 80% in recent times and demand has consequently dropped drastically to 64.

With a highly competitive market space in Ghana, management found it necessary to commission a study to continually measure usage and attitudes (U&A) of consumers of cereals to enable GAMA LTD provide appropriate products to the market.

Management of GAMA LTD engaged ROMO Marketing Research, a well-known research agency based in Accra, to conduct a marketing research study among users of Infant Cereals.

By assessing the users of cereals, only **females** were contacted for the study. Also, to estimate the incidence of cereals (i.e., Wheat and Maize) usage, ROMO Marketing Research included non- users of cereals in the study. To effectively compare wheat and maize cereals usage, findings of cereal users were taken critical for decision making.

ROMO Marketing Research envisaged that the Ghanaian cereal market is dominated by YumVita and Cerelac. The research was conducted in Accra only.

The Venn Diagram illustrates the sample distribution of the findings among **females**.
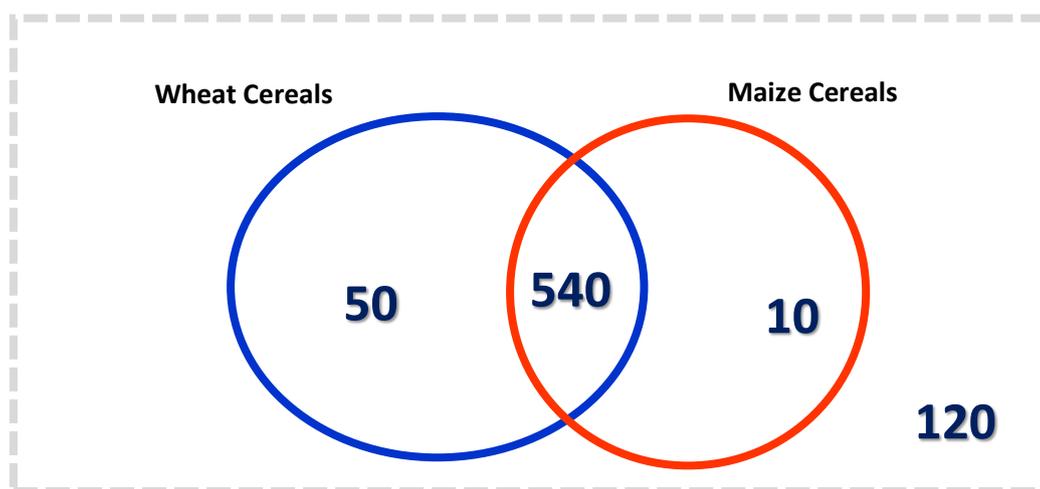
$\mathcal{U}$ is the universal set

From the findings, the non-users of cereals in Dansoman and Nima, dislike brand of infant cereals because of the following:

DISLIKEs

1. Feel like vomiting sometimes		5. It is not healthy	
2. Too much sugar		6. It has become expensive	
3. Feel uncomfortable when I use it		7. It gives heart disease	
4. I heard it is only for infants		8. My children do not like it	

This information was given by different age groups in Dansoman and Nima, but management wants to know the reliability of these displeasures on infant cereals to take necessary steps in one of the locations. The mean and standard deviation of each location is as follows:

	Dansoman	Nima
Mean Age	**26.5**	**30.5**
Standard Deviation	**4.41**	**4.82**
Sample Size	**200**	**200**

In assessing persons who mostly buy infant cereals in the household, finding of respondents who mostly purchase cereals in the market are as follows

Mother	22%
Myself	20%
Son	14%
Daughter	12%
Brother	11%
Wife	9%
Father	8%
House help	5%

Management do not agree with this information as they found an error in one of the responses

SECTION A

Answer all questions in section A

You have been appointed as a Marketing Manager for GAMA LTD and there are many questions that needs to be explained by the management.

1a(i). What is the total number of respondents interviewed? **(2 marks)**

1a(ii). What is the number of respondents who consume Wheat Cereals? **(2 marks)**

1a (iii). If management wants to select a respondent at random, what is the probability that the person will be using Maize Cereal? **(4 marks)**

1a (iv) What is the probability that the respondent will be a male? **(2 marks)**

1b (i) Determine the coefficient of variation for each location. (12 marks)

1b(ii) Advise the management on the location which needs to be initially focused on to solve the displeasure of the respondents. (8 marks)

GAMA LTD had written to ROMO Marketing Research about the quality of some responses especially on buyers of cereals in the market. ROMO Marketing Research perceived the findings to be interviewer error.

1c (i) Explain interviewer bias? (4 marks)

1c(ii) Identify the error in the responses below. (4 marks)

<u>Who mostly buys the cereals for your household?</u>

My Mother	22%
Myself	20%
My Son	14%
My Daughter	12%
My Brother	10%
My Wife	9%
My Father	8%
My House Help	5%
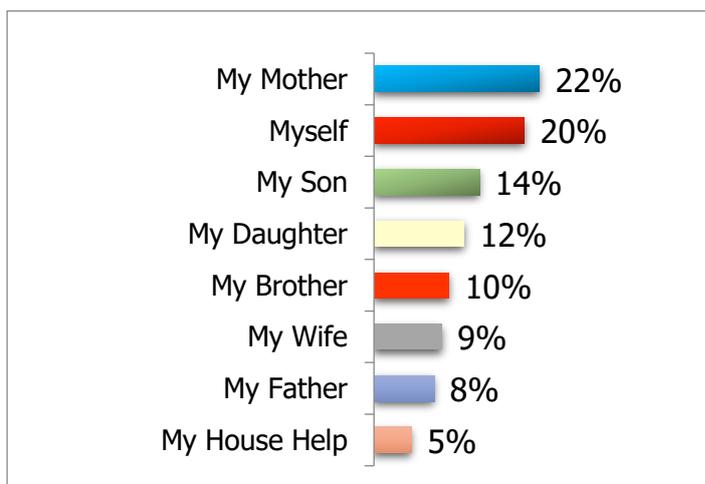
1c (iii) Give reason(s) why your response to 1c(ii) above is an error. (2 marks)

SECTION B

ANSWER THREE QUESTIONS ONLY IN THIS SECTION

QUESTION ONE

DOCA manufactures a malt drink namely Kolta, the leading malt drink in Ghana.

DOCA imports 80% of its raw materials from Europe and its competitors get all their raw materials in Ghana. As the euro becomes stronger, price of Kolta keeps on increasing but Chomalt, the second leading malt drink in Ghana had its price unchanged. As price of Chomalt remains unchanged at GHS 6, the following market conditions occurred.

Price in GHS	Market Share (Kolta Malt) %	Chomalt Market Share at fixed price of GHS 6 %
1	70	10
2	65	15
3	60	18
4	58	20
5	54	24
6	50	28
7	46	30
8	42	35
9	30	38
10	25	40

With the recent economic situation management of DOCA have decided to increase the cost of a Kolta drink to GHS 12 by January 2023.

Assuming the relation between Price and Market Share of Kolta Malt is regressed by the chart below.

Price and Market Share of Kolta Malt

Y-axis: Price of Kolta Malt (0 to 12)
X-axis: Market Share of Kolta Malt (0 to 80)

$y = -0.2042x + 15.709$
$R^2 = 0.9653$
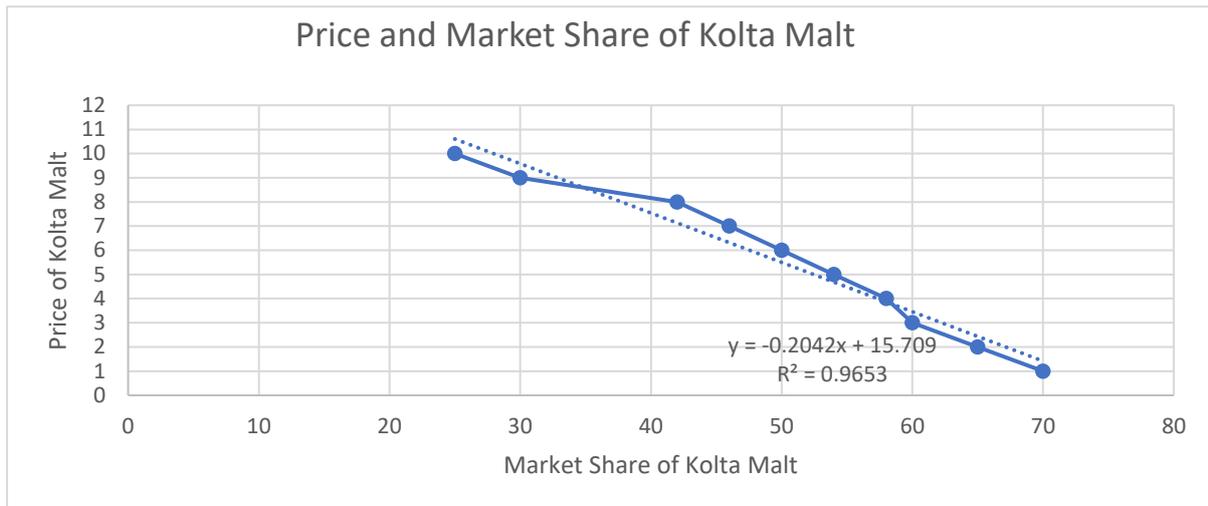
a. Identify the dependent and independent variables. (5 marks)

b. Predict the market share of Kolta malt if the price increases to GHS12. (10 marks)

c. What advise will you give management on this? (5 marks)

QUESTION TWO

(a). Explain the term "**Time Series Data**" (5 marks)

(b). A box contains 10 balls, 6 are red and 4 are black. If **2** balls are picked **without replacement**, what is the probability that.

    (i)   both balls are red. (5 marks)

    (ii)   First ball is red, **and** second ball is black. (5 marks)

    (iii)   Both balls are Black. (5 marks)

QUESTION THREE

(a). Explain the difference between Primary data and Secondary Data? (5 marks)

(b). Under what conditions will you recommend secondary data and Primary data? (5 marks)

(c). What is the difference between Simple Random Sample and Stratified Random Sample? (5 marks)

(d). Under what conditions will you recommend Stratified sample over Simple random sample? (5 marks)

QUESTION FOUR

a. What is an Index Number? (2 marks)

b. The prices paid for Internet and television adverts in 2020 and 2021 are shown below.

Using 2020 as the base year, compute a 2021 price index for Internet and television advert prices. (6 marks)

	Year	
	2020	2021
Internet	14,794	29,412
Television	11,469	23,904

c. Interpret your results (4 marks)

d. State TWO advantages and TWO disadvantages of each of the following.

  i. Laspeyres index numbers (4 marks)
  ii. Paasche index numbers (4 marks)

QUESTION FIVE

The ages of respondents that purchase Television at West Hill Mall on 30th November 2022 are on the table below.

Age	Frequency
15	0
20	4
25	14
30	17
35	8
40	5
45	2

a. Construct a cumulative frequency table for the data. (4 marks)

b. Draw a cumulative frequency curve (ogive). (8 marks)

c. Obtain the median and upper quartile of the age. (6 marks)

d. What is the modal age? (2 marks)